

CLAIMS

1. A process for purifying a cell-derived product from a cell culture, said process comprising
5 treating an extract of the cell culture or a growth medium of the culture at a temperature between about 60 °C to 90 °C and cooling the treated extract or growth medium to a temperature below about 60 °C.
2. A process according to claim 1, further comprising subjecting the treated extract or
10 growth medium to a separation step that separates the extract or growth medium into a precipitate and a soluble portion.
3. A process according to claim 1, wherein the treatment at a temperature between about
60 °C to 90 °C is for a period of time between about 1 min and about 60 min.
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4. A process according to claim 3, wherein said time period of between about 1 min and about 30 min.
5. A process according to claim 4, wherein said time period is not more than about 10 min.
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6. A process according to claim 1, wherein the extract or growth medium is cooled to a temperature below about 35°C.
7. A process according to claim 1, wherein the cell culture is selected from the group consisting of bacterial and yeast cells.
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8. A process according to claim 8, wherein the cell culture is selected from the group consisting of *Escherichia coli*, *Saccharomyces cerevisiae*, *Pichia pastoris*, *Pichia methanolica*, *Candida utilis* and *Kluyveromyces lactis*.
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9. A process according to claim 1, wherein the cell culture comprises recombinant cells.
10. A process according to claim 1, wherein the cell-derived product is a protein.

11. A process according to claim 10, wherein the protein has a molecular weight below about 25,000 daltons.
12. A process for purifying a fermentation-derived product, said process comprising the steps of :
- a) heating the fermentation broth containing said fermentation-derived product or a precursor thereof to a temperature in the range from 60 °C to 90 °C,
 - b) cooling the fermentation broth to a temperature below 60 °C;
 - c) separating the precipitate from the soluble portion of the fermentation broth at a temperature less than 60 °C; and
 - d) isolating said fermentation-derived product.
13. The process according to claim 12, wherein no flocculation agent is added to said fermentation broth.
14. The process according to claim 12, wherein the temperature of the fermentation broth during the separation step c) is less than about 40 °C.
15. The process according to claim 12, wherein separation in step c) is performed by a method selected from the group consisting of centrifugation, microfiltration, and combinations of any of the foregoing.
16. The process according to claim 12, wherein the process steps a), b) and c) are run in continuous mode.
17. The process according to claim 12, wherein said soluble portion of the fermentation broth produced in step c) is subjected to a method selected from the group consisting of column chromatography; crystallization; precipitation; ultrafiltration; or combinations of any of the foregoing.
18. The process according to claim 12, wherein the cut-off value of the UF membrane is lower than about four times the molecular weight of the fermentation-derived product.

19. The process according to claim 12, wherein said fermentation-derived product or a precursor thereof is a protein.
20. The process according to claim 19, wherein said protein is selected from the group consisting of GLP-1, exendin-4, exendin-3, GLP-2, glucagon, TFF peptides, interleukins, insulin, albumin, precursors of any of the foregoing, and analogs of any of the foregoing.
21. The process according to claim 20, wherein said protein is selected from the group consisting of human insulin, a human insulin precursor, a human insulin analog, a human insulin analog precursor, Arg³⁴-GLP-1(7-37), and GluGluAlaGluLys-Arg³⁴-GLP-1(7-37).